

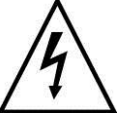


X16D1H

PROFESSIONAL 16 CHANNEL REAL TIME D1 DVR



User Manual

 CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN 	WARNING TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.	
 This symbol is intended to alert the user to the presence of unprotected "Dangerous voltage" within the product's enclosure that may be strong enough to cause a risk of electric shock.	NOTE: This equipment has been tested and found to comply with the limits for a class digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.
 This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.	



Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Notice: Ghosting or fractured images may occur on the screen when there is a suddenly surge or lightning stroke which cause damage on IC in the DVRs.

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Please Note: On-screen options such a number of Channels, Split Screen Options, Alarm inputs etc. used in this manual may differ from the actual model purchased (i.e. a 16 channel DVR will display 16 channel options and the 32 Channel will display 32 channel options).

Chapter 1 LIVE OPERATIONS

Within live mode, the user can view all the channels as a multi view on the screen, listen to live audio, as well as operating the DVR. The DVR can either be viewed as in 4:3 or 16:9 (Widescreen) format by selecting the screen aspect ratio button on the shortcut toolbar, which is can be found by hovering the mouse at the top of the screen.

Please Note: Under the 16:9 aspect ratio (Widescreen mode); Hovering the mouse at the bottom of the screen will allow the channel state window to appear.

4:3 Aspect Ratio (Normal Mode) - Operation screen



16:9 Aspect Ratio (Widescreen Mode) - Operation screen

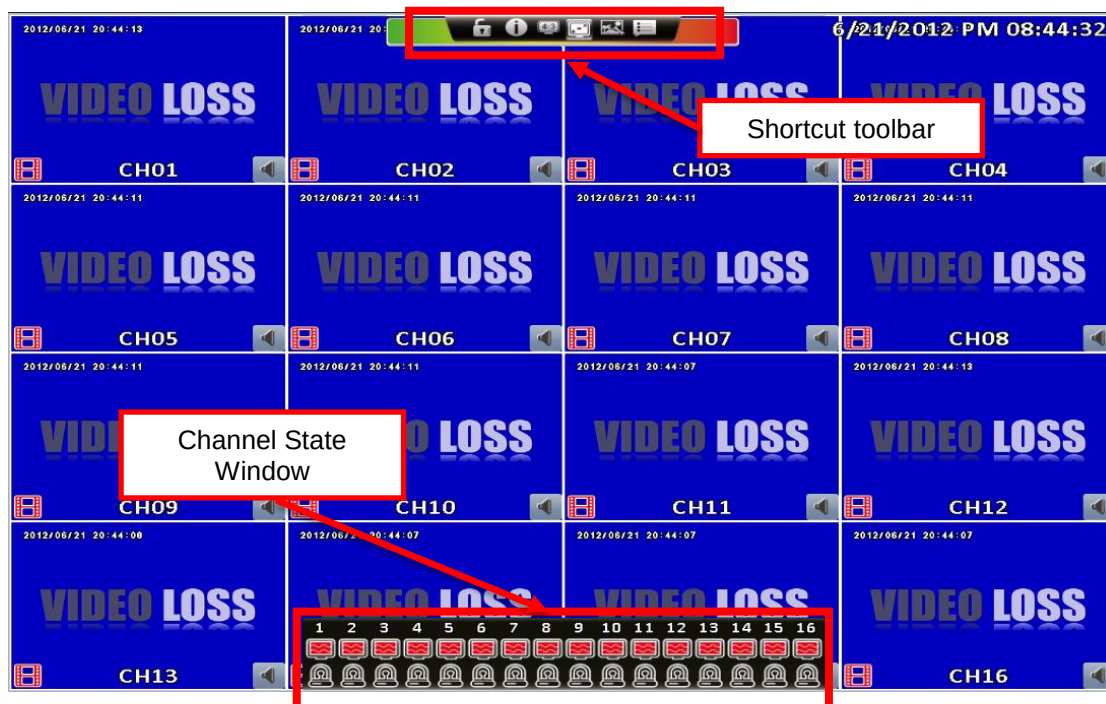
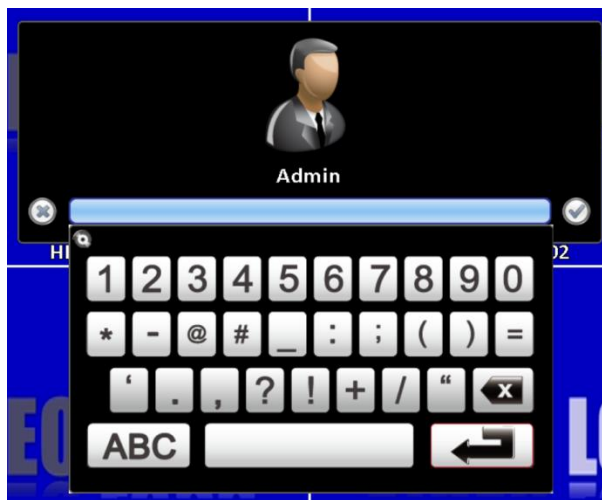


Table 1-1 Icon descriptions in live mode

Icon	Description
	Recording is activated
	Live audio is activated
	Live audio is not activated
	Video signal is Normal
	Event recording is active
	Motion detection triggered
	Alarm has been triggered
	Alarm has not triggered
	The channel video loss alarm has been triggered
	USB device has been detected
	DVD device has been detected
	Network has been detected
	Network has not been detected
	Displays the current user
	Displays the current drive space being used as both a percentage and actual figure. The upper left corner displays the hard drive temperature
	Date & time will be displayed on each channel (i.e. during Local playback, Remote Live View, Remote Playback and Backup Video)

Chapter 2 MAIN MENU SETUP

To enter the main menu and set up the DVR a user log-in and password are required. The default password of the administrator is '123456'. Please check the section '**Account Setup**' for information on setting up other users.



Virtual keyboard Description

Item	Description
	Switch between capital and small letters.
	Switch between numbers and letters.
	Press to cancel the setup, and re-enter details.
	Delete the last character.
	Enter to confirm the password
	Space key

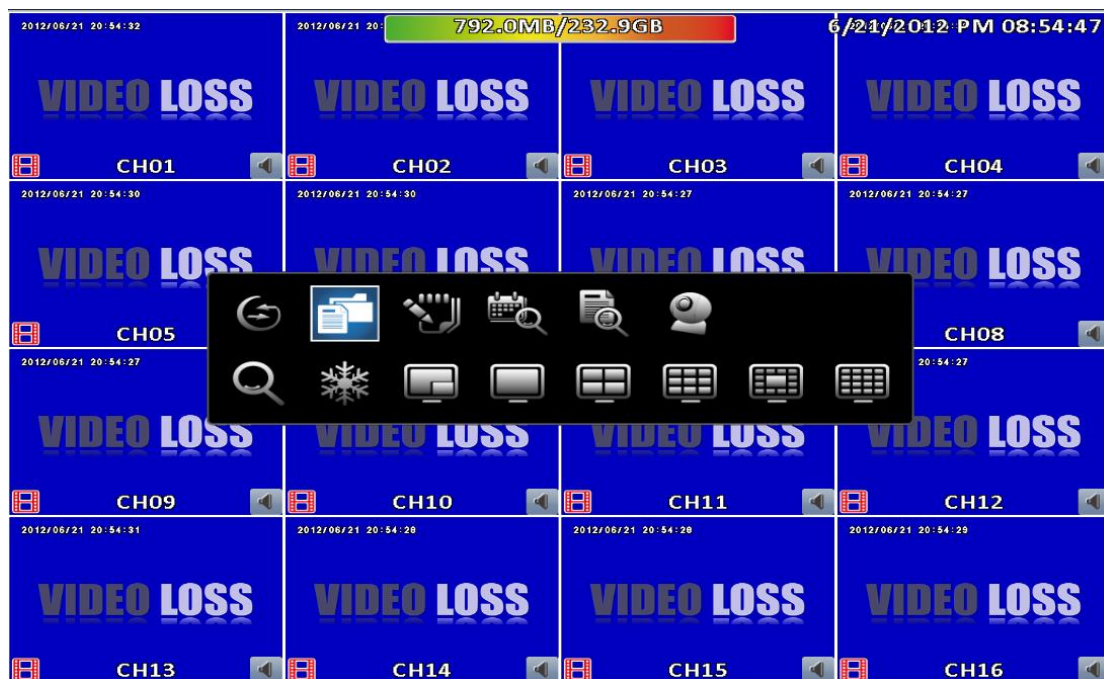
Remote Control Button Description

Item	Description
	Scroll LEFT/RIGHT between menu options
	Scroll UP/DOWN between menu options
MENU	Save current setup and return back to LIVE mode
ESC	Return to previous menu without saving
ENTER	Enter menu option or display virtual keyboard

4:3 Aspect Ratio - The main menu is located to the left side of the screen



16:9 Aspect Ratio - Right-click on the screen to display the main menu

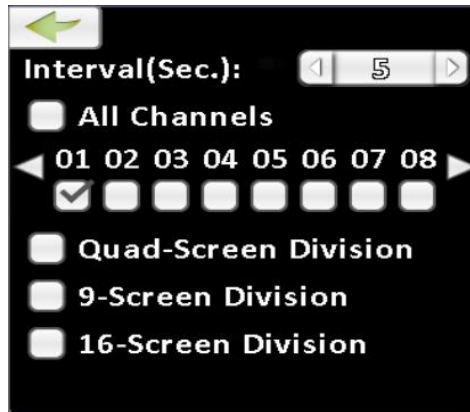


Main Menu Icon Description

Icon	Description
	Auto Sequential switch menu
	Backup menu Backup video data from DVR HDD
	Configuration menu
	Time search menu Choose a specific time of the video data playback
	Event search menu
	Enable PTZ mode
	SPOT mode (SPOT on the second monitor)
	Zoom in (Enlarge video image from 2x to 8x digital zoom)
	Enable image freeze function
	Disable image freeze function
	Enable/Disable PIP
	Switch to single screen
	Switch to 4-split display
	Switch to 9-split display
	Switch to 13-split display
	Switch to 16-split display

2-1 Auto Sequential

The Auto Sequential feature allows the user to set the DVR to scroll through the cameras automatically. Various viewing options can be defined by the user and is detailed below:

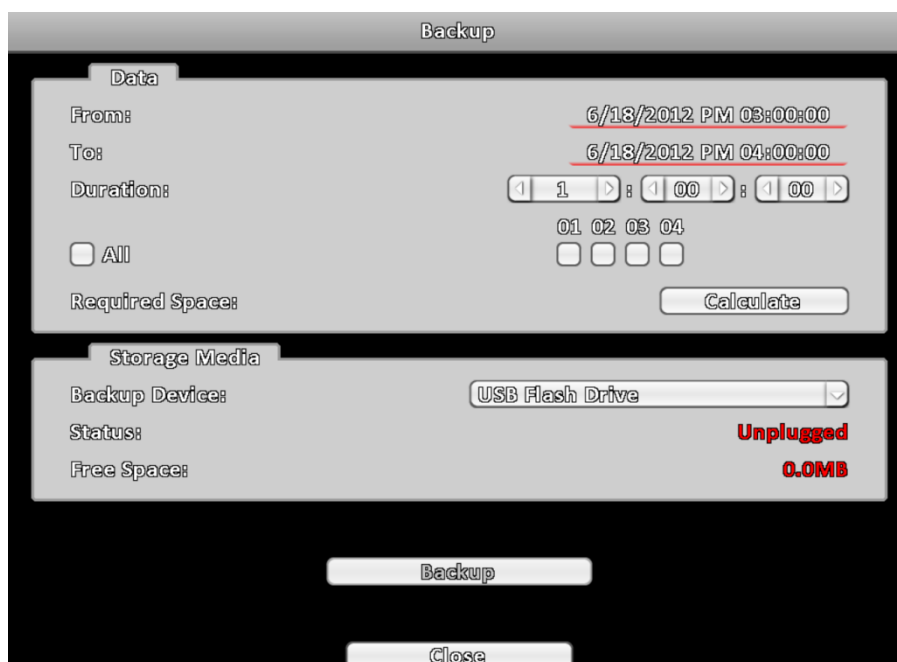


Auto Sequential Description

Item	Description
Interval	The number of seconds the image stays on a chosen channel (i.e. In SPOT mode)
Single Screen Division	Select to set automatic sequential channel switching for single channel (i.e.by setting the number of seconds each channel is displayed in a single screen before switching)
Video Loss	Select Video Loss to mask channel channels which have been hidden/masked
Quad-Screen Division	Select to set automatic sequential channel switching for a quad-screen split view
9-Screen Division	Select to set automatic sequential channel switching for a 9-screen split view
16-Screen Division	Select to set automatic sequential channel switching for a 16-screen split view

2-2 Backup

User can back-up any segment of recorded data in a specified time frame. To do so, either a CD R/W or storage device, like USB, must be connected to the DVR.



Auto Sequential Description

Item	Description
From	The start time of backup file
To	The end time of backup file
Duration	Allows the user to specify the duration time they require for their back up file (to be used in conjunction with the 'From' and 'End' time).
All	Selects all the channels to backup.
Required Space	Displays the size of the backup file
Calculate	Displays/Refreshes the calculation of the size of backup file
Backup Device	Select backup device (USB/DVD-RW)
Status	Backup device status
Free Space	The available space on your backup device
Backup	Starts the backup function.

Please Note: Do not turn off the power to the DVR or remove the USB device whilst upgrading as it may cause an incomplete firmware upgrade and may damage the DVR.

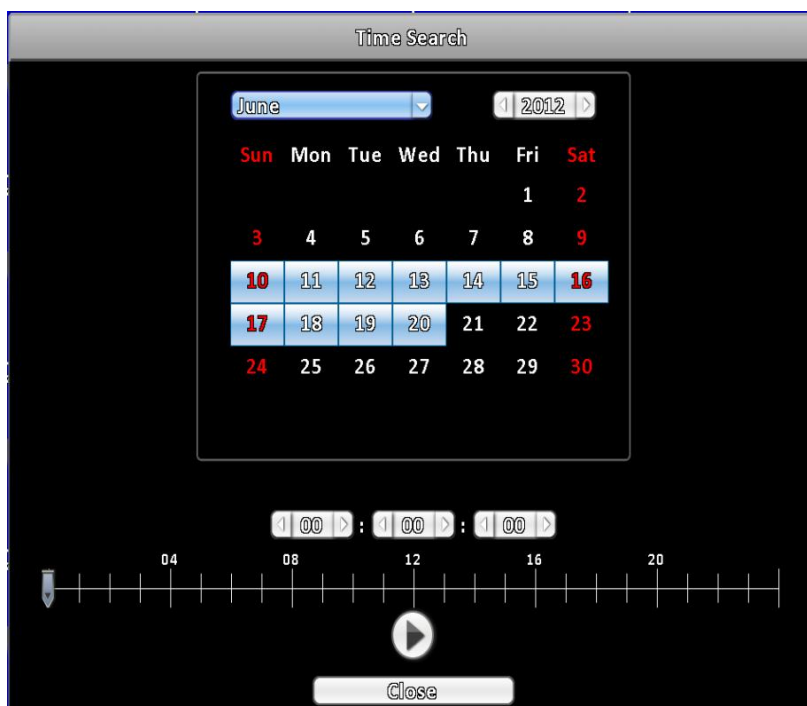
2-3 Configure

The Configuration Menu Page allows the user to configure various settings on the DVR which are displayed in the image below. Further information on each individual function is detailed in section 'Configuration Menu'.



2-4 Time Search

TIME SEARCH allows the user to search for recording data within specific times. Dates that contain any recording data are highlighted with a blue square, as detailed in the image below.



Users can select the specified date (Including month/year) using the on-screen calendar. The time can also be further specified by using the drop down menu or the slider time bar located at the bottom of the page.

Once the date/time has been specified please click the play button, which will then take the user to the playback screen and menu, as detailed below:

Playback Menu (4:3 Aspect Ratio)



Playback Menu Description

Icon	Description
	Stop playback and return to the previous page
	Play
	Pause
	Fast rewind (speed 4x, 8x, 16x, 32x)
	Fast forward (speed 4x, 8x, 16x, 32x)
	Slow playback (speed 1/2x, 1/4x, 1/8x)
	Step playback
	Zoom-in display (2x~8x digital zoom)
	Full screen display
	Quad display
	9 screen display
	16 screen display

Please Note: Users can also double click on a single desired channel if you want to view a single channel during playback.

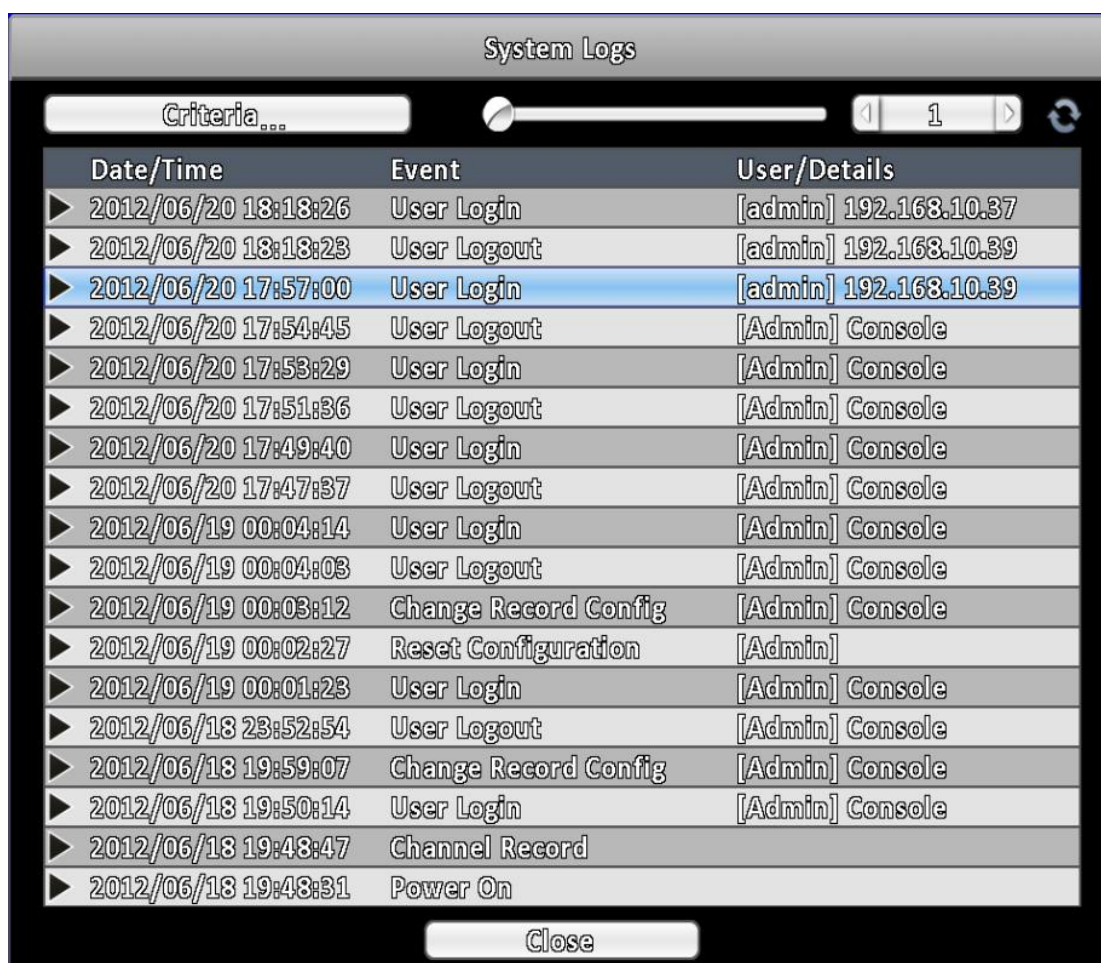
Remote Control functions under Playback mode

Button	Description
ENTER/MODE	Switch to full screen or multi split display.
MENU / II	Turn on/off PAUSE.
PLAY	Play back at normal speed.
▲ / SLOW	Play back at a slower speed; the speed will be reduced each time the button is pressed (i.e. 1/2, 1/4, 1/8)
◀◀ / ◀	Fast rewind; The speed is increased each time the button is pressed (i.e.2x, 4x, 8x, 16x, 32x and 64x).
▶▶ / ▶	Fast forward. Each press increases the speed to the next level. There are six speeds: 2x, 4x, 8x, 16x, 32x and 64x
▼ / ■	Stop playback.

2-5 System Logs

The DVR will automatically record a log of events during its operation, which includes events such as User Login details, Alert/Event types (i.e. Motion Detection) and other useful information for administrators.

If an event video has been recorded for the corresponding event there will be a ► symbol located to the left of the date. To playback specific events move the cursor to the selected line/event and either press 'ENTER' on the front panel or double-click the mouse button to playback the specified video.



Please Note: Despite a hard drive not being installed the DVR will still make a log of events, which will not contain any video footage.

Item	Description
Criteria	Setup parameters of the event search
	Hold down the control box move across the slider to scroll through the event log.
	Press the left and right arrow keys or enter the page number directly to move through the various event log data.
	Refresh system log

2-5.1 Search Criteria

The amount of events generated can be numerous and the users can make the search more efficient by clicking 'Criteria', and selecting specific parameters to search within. The search results will be limited to a specific period of time but the user can also select/deselect parameters such as Motion Detection, Video Loss, Channels etc. (see image detailed below)

If the start time and end time options are checked the event list will only display the events within the time record.

☐ From: 6/20/2012 AM 11:17:55

☐ To: 6/20/2012 AM 11:17:55

☐ All

☒ Power On	☒ Channel Record	☒ Video Loss
☒ Sensor	☒ Video Motion	☒ User Login
☒ User Logout	☒ Export Configuration	☒ Reset Configuration
☒ Import Configuration	☒ Export Logs	☒ Clear Logs
☒ Change Date/Time	☒ Change Record Config	☒ HDD Format
☒ Set HDD Record Flag	☒ System Upgrade	☒ Backup
☒ Set Admin Password	☒ Write Error	

☐ User

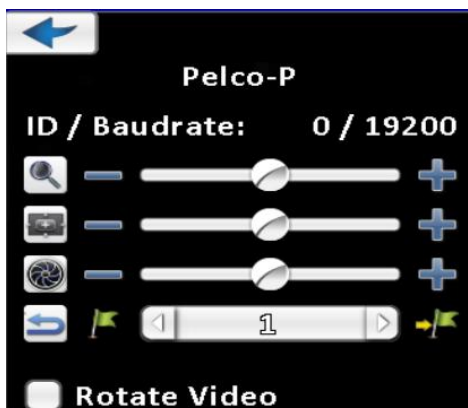
☐ All

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒

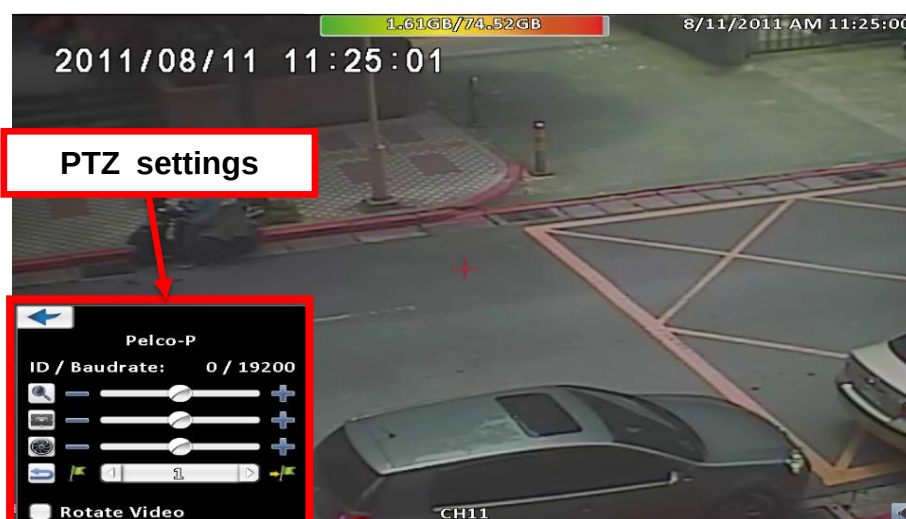
OK Cancel

2-6 PTZ Operation

Once entering the PTZ mode via the main menu, a PTZ control panel will appear on the left hand side of the screen (for both normal and wide screen operations), as shown in the images below.



Additionally using a red cross (displayed in the middle of the screen; shown below), users can move the camera by holding down the left mouse button and then dragging the mouse to the desired direction/location.



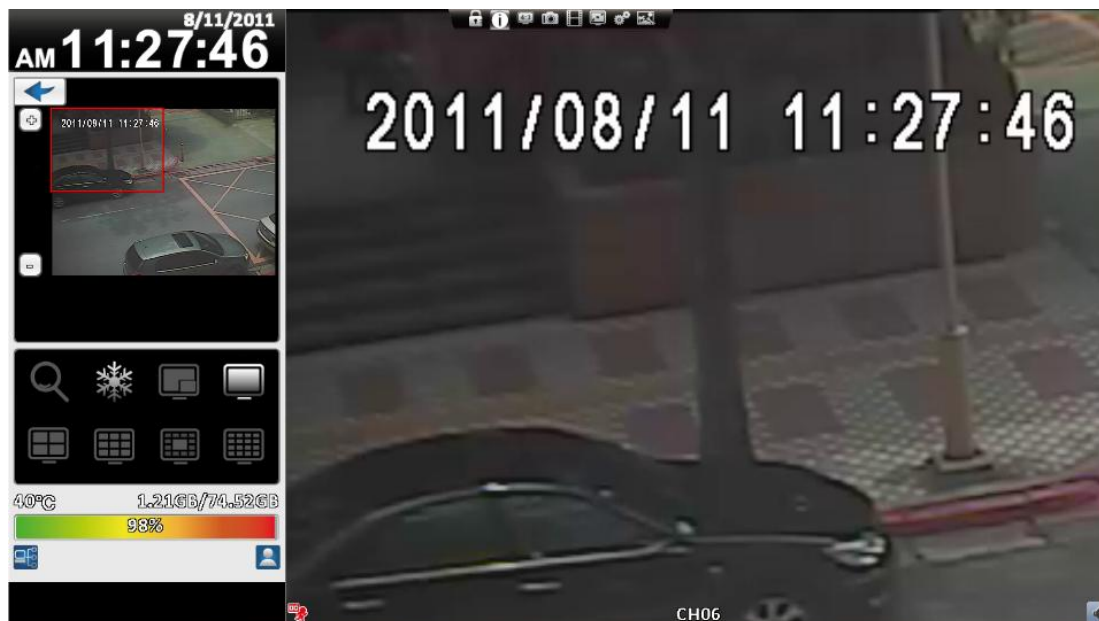
PTZ function – 16:9 Widescreen

PTZ Control Description

Item	Description
	ZOOM - Press + / - or move the circle to adjust the PTZ focal length
	FOCUS - Press + / - or move the circle to adjust the PTZ focus
	IRIS - Press + / - or move the circle to adjust the PTZ iris
	Press left/right arrow keys to select a default location, and then press to set the default point
	Press left /right arrow keys to a preset point, and then press forward to the default point
Rotate Video	Rotates the video by 180°

2-7 Zoom

The zoom function brings up small screen on the menu with shows red rectangle that indicates the current zoomed-in area (detailed below). To view different zoomed-in area, users can simply drag this red rectangle on the screen, to the desired area.



4:3 (Normal View) - Zoom

Zoom Control Description

Item	Description
	Screen enlarges range of the area circled in red rectangle.
	Screen reduces range of the area circled in red rectangle.
	Exit zoom mode

2-8 Shortcut toolbar

The shortcut toolbar is located by moving the mouse/cursor over the top/central part of the screen (this is the same for both the normal and widescreen options), as detailed below:

Widescreen Display – Shortcut toolbar



Shortcut Toolbar

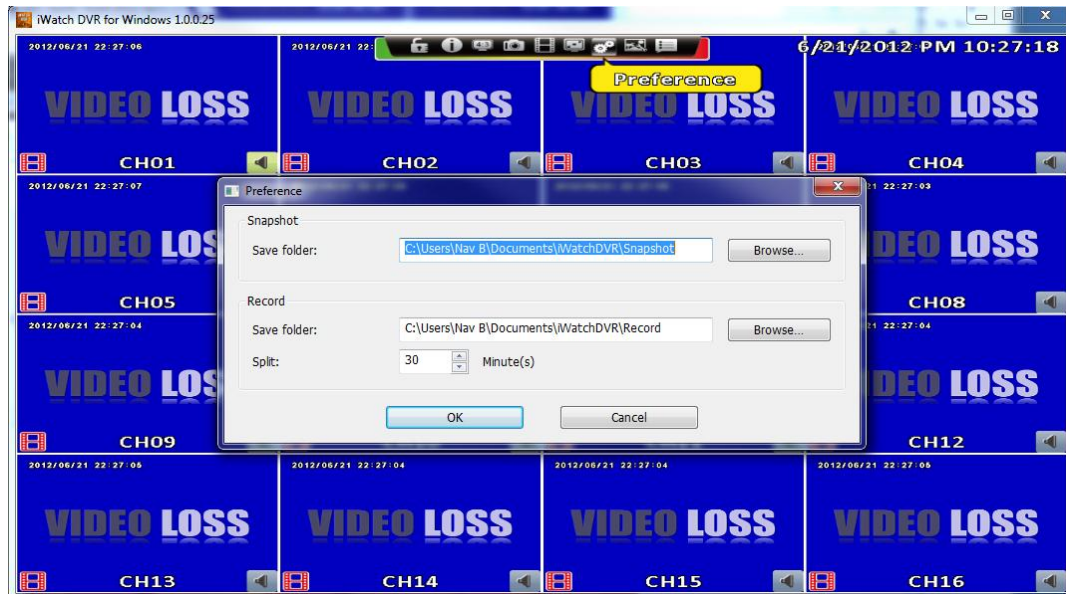
Icon	Description
	User login / out: using auto-lock
	System Information: The model name, version, IP address, MAC, and hard drive information
	Wide-screen switching: switch 4:3 / 16:9 display.
	Screenshot
	Enable / Disable recording function
	Full screen
	Options: Change the path of PC screen snapshots, video storage.
	Network stream quality: Adjust the video bandwidth based on PC network bandwidth

2-8.1 Preference

Accessing the DVR remotely via the **iWatchDVR** computer software includes some additional features to the Shortcut Toolbar. The toolbar includes a snapshot button (screen image), a record button and a Preference button as detailed in the image below:

The preferences allow the user to select where on the computer the data is stored for the both the image snapshots and recorded video files.

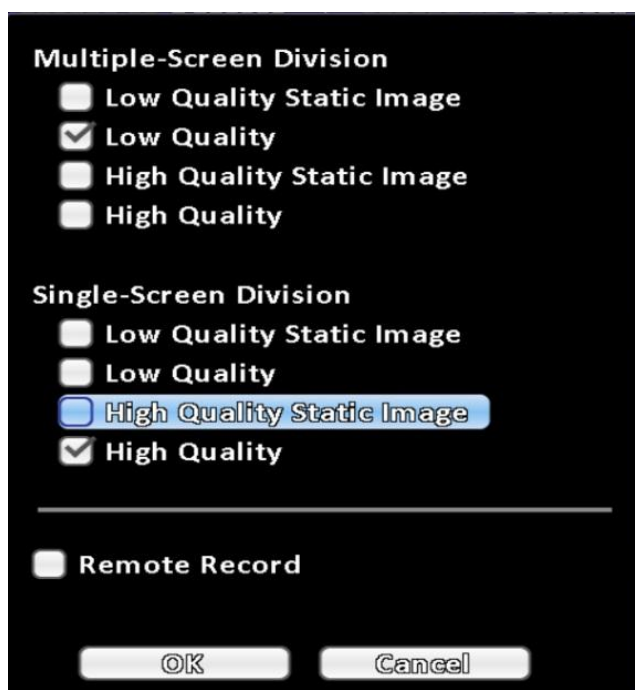
Additionally users can set the length of the recorded file segment by adjusting the 'Split' value within preferences, which is defaulted to a value of 30mins (i.e. 1 hour recording will be saved as two 30 minute segments).



Please Note: For further details on the iWatchDVR software please see section 4 on 'Remote Access'.

2-8.2 Network stream quality

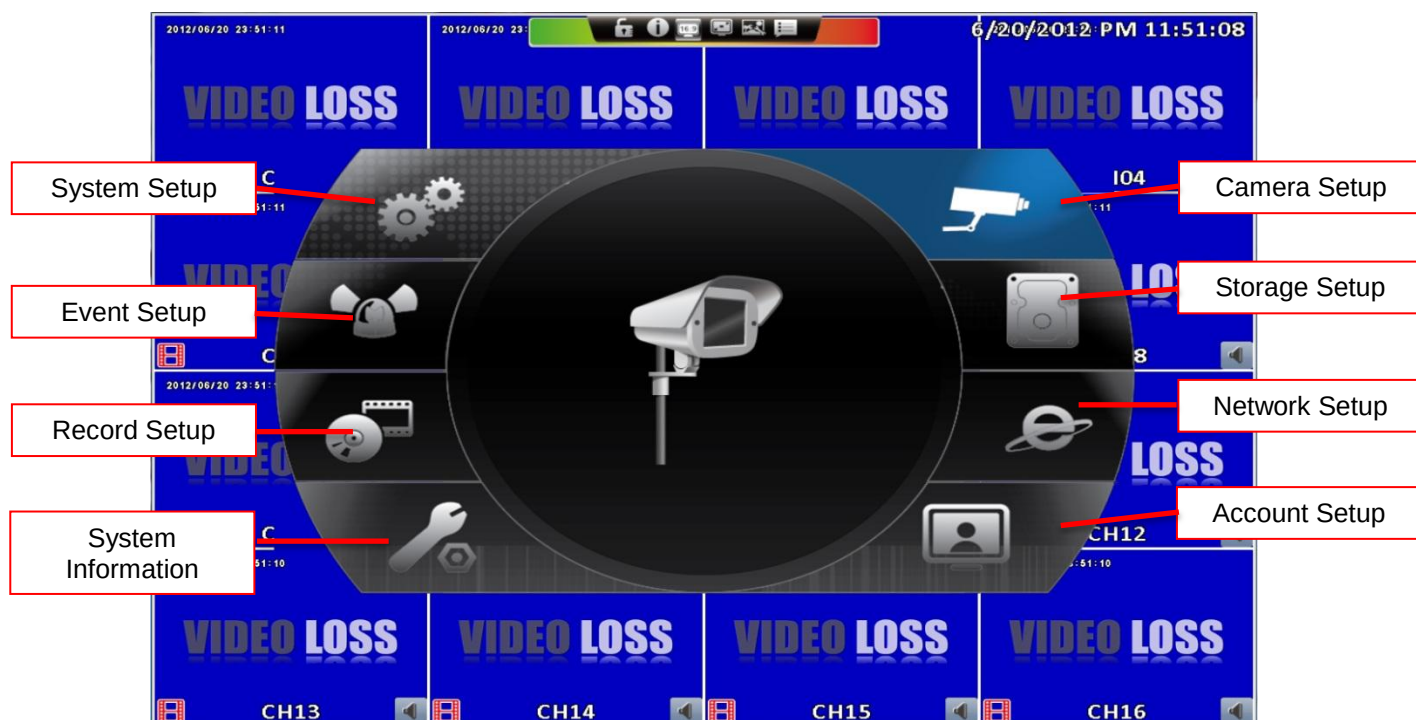
The network stream quality allows the user to adjust the settings for both single and multiple screen options, so that they can be optimized for streaming.



Item	Description
Low Quality Static Image	Low quality static model: insufficient bandwidth to use for 1 ~ 2FPS.
Low Quality	Low quality dynamic model: According to the DVR recording settings.
High Quality Static Image	High quality static model: insufficient bandwidth to use for 1 ~ 2FPS.
High Quality	High quality dynamic model: According to the DVR recording settings.

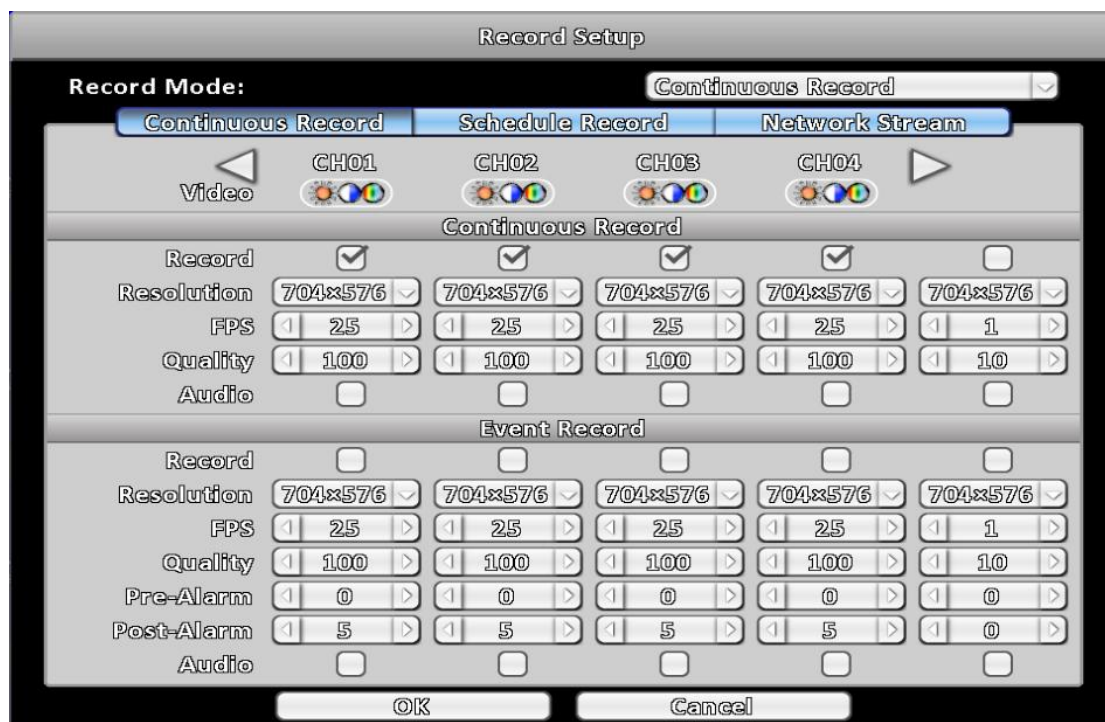
Please Note: Image fluency is dependent on actual network environment, effecting both image quality and connection speed.

Chapter 3 CONFIGURATION MENU



Please Note: A new hard drive must be formatted before being used. Please refer to "UTILITY SETUP" for further information.

3-1 Record Setup



Continuous Record Description

Item	Description
Video	Clicking the   icons will take the user to the image screen of the selected channel and allows the user to adjust image features such as Image Sharpness, Brightness, Saturation, Contrast, Hue and Volume.
Record	Enable/disable recording for this channel
Resolution	Select recording resolution: 352x288, 704x288, 704x576
FPS	Select recording frame rate (value from 1 to 25)
Quality	Recording quality (values from 10 to 100; the higher the number the better the recording quality)
Audio	Enable/disable recording audio for the specified channel

Event Record Description

Item	Description
Record	Enable/Disable recording for this channel
Resolution	Select recording resolution: 352x288, 704x288, 704x576
FPS	Select recording frame rate (value from 1 to 25)
Quality	Recording quality (values from 10 to 100; the higher the number the better the recording quality)
Pre-Alarm	Set the time (seconds) the playback video should contain before the event occurs (values from 0 to 5)
Post-Alarm	Set the time (seconds) the playback video should contain after the event occurs (values from 0 to 100)
Audio	Enable/Disable recording audio for the specified channel

3-1.1 Schedule Recording

Schedule Recording allows users to configure recordings by specific dates/times. The recording page depicts week/time grid map (as detailed in the image below) with users being able to set up to 4 different schemes.

On selecting a schedule scheme (between A to D), users can click individual cells on or drag an area on the grid to allocate the selected to the chosen scheme. Once the cells have been successfully selected the grid will display the scheme number to which it has been allocated (i.e. A, B, C or D). Additionally users can then apply specific recording settings for each scheme by clicking the corresponding 'Setup' button.

Record Setup

Record Mode: Off

Continuous Record | **Schedule Record** | Network Stream

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sunday																								
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								
Holiday																								

None | **A** | Scheme1 | Setup...
 B | Scheme2 | Setup...
 C | Scheme3 | Setup...
 D | Scheme4 | Setup...
 Holiday Setup...

OK Cancel

Furthermore the week/time grid also allows holiday allocation where users can consequently apply different rules. Users can select these dates (a maximum of 50 can be set) by clicking on the 'Holiday Setup' button, which will bring up a calendar, as detailed below:

January

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

OK Cancel

3-1.2 Network Stream

Record Setup

Record Mode: Continuous Record

Continuous Record
Schedule Record
Network Stream

	CH01	CH02	CH03	CH04
Custom	☒	☒	☒	☒
Resolution	352x288	352x288	352x288	352x288
FPS	25	25	25	25
Quality	100	100	100	100
Audio	☐	☐	☐	☐

OK
Cancel

Item	Description
Custom	Enable/Disable recording for this channel
Resolution	Select recording resolution: 352x288, 704x288, 704x576
FPS	Select recording frame rate (value from 1 to 30)
Quality	Recording quality (values from 10 to 100; the higher the number the better the recording quality)
Audio	Enable/Disable recording audio for the specified channel

3-2 Event Setup

3-2.1 Video Loss

The Video Loss function allows the user to set the parameters should a channel lose its video connection, as detailed below:

The screenshot shows the 'Event Setup' dialog box with the 'Video Loss' tab selected. The 'Setup' section has an 'Enable' checkbox. The 'Event Handler' section includes checkboxes for 'Log', 'Event Record', 'Popup', 'Popup Channel', 'Buzzer', 'Relay', 'PTZ', 'Go Preset', and 'Resume Preset'. Each of these has a corresponding dropdown menu for channel selection (CH01, CH02, CH03, CH04, Relative). The 'Mail to' field is set to 'Receiver Setup...'. The 'OK' and 'Cancel' buttons are at the bottom.

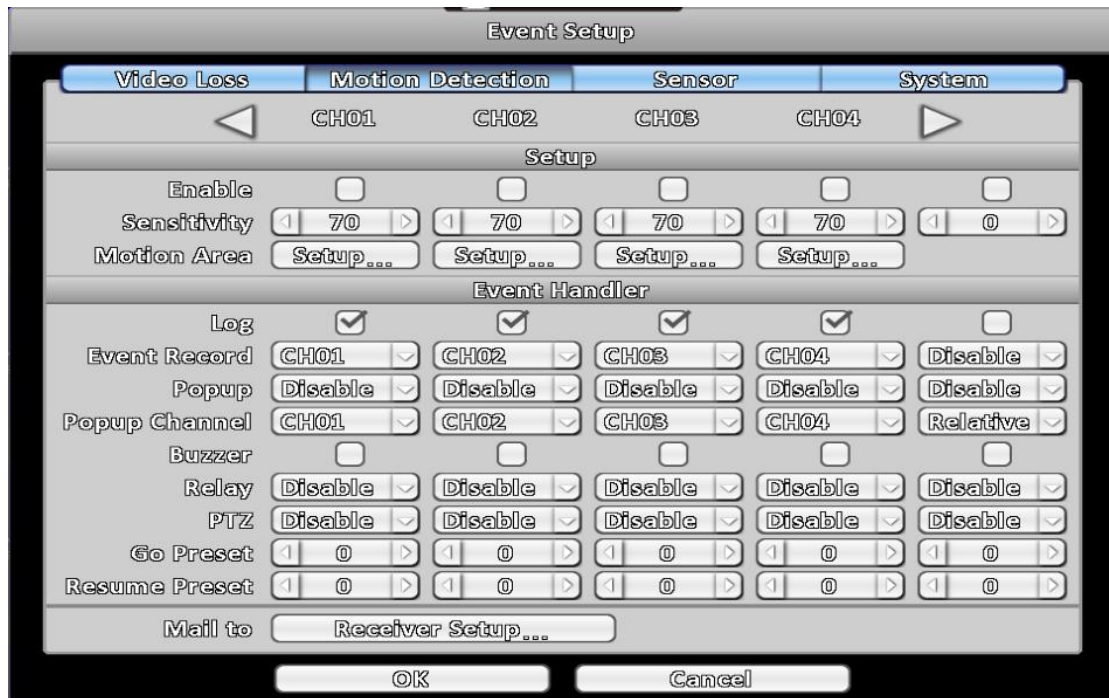
Video Loss Description

Item	Description
Enable	Enable/Disable video loss detection function
Log	Enable/Disable whether data is saved to the Event Log should an event occur.
Event Record	Enable event recording on selected channel
Popup	Enables a full screen pop up, if motion detection is activated on the selected channel. Users can specify which display the pop-up is activated on (i.e. 1 or 2)
Popup Channel	Select which channel the pop up appears once motion has been detected.
Buzzer	Activates the buzzer upon an event occurring
Relay	Activates the relay upon an event occurring.
PTZ	Switches display to the PTZ control upon an event occurring.
Go Preset	Switches display to the chosen PTZ preset point upon an event occurring (values from 0 to 255)
Resume Preset	Switches display to the chosen PTZ preset point upon an event occurring (values from 0 to 255)

Additionally users can select users to email should a video loss event occur by clicking the 'Receiver Setup'. To set up email accounts please see section '**Account Setup**'.

3-2.2 Motion Detection

The Motion Detection feature allows the user to setup a defined area which can set up alerts based upon the DVR detecting motion:



Motion Detection Description

Item	Description
Enable	Enable/Disable the motion detection function of this channel
Sensitivity	Set the motion detection sensitivity (value from 0 to 100) for each channel. The higher the value the greater is the sensitivity.
Motion Area	Select to setup a motion detection area

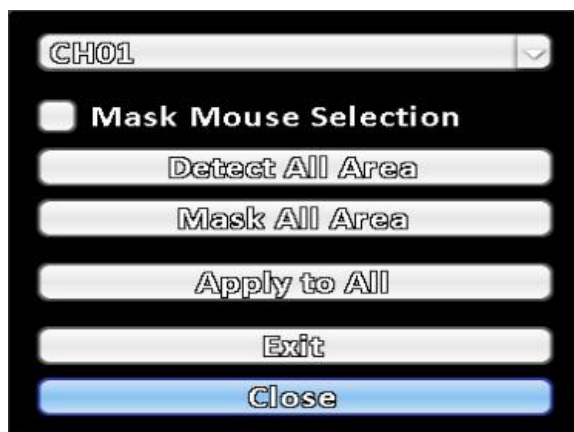
3-2.2.1.1 Motion Area Setup

The motion detection area has been divided into a grid that is made up of 22x18 boxes. The default detection area is a full screen (transparent colour for a local DVR access and purple for remote access users). Any areas deselected from motion detection are highlighted in grey (for both local and remote access users):



4:3 (Normal Display) – Motion Detection

User can right click on the screen to bring up further motion detection options, as detailed below:



Item	Description
CH01 – CH32	Select channel to setup motion detection
Mask Mouse Selection	Switch between select/deselect for the cursor-dragging function (i.e. allows the user to draw out a grid on the screen using the mouse)
Detect All Area	Selects the entire screen as detection area.
Mask All Area	Deselects the entire screen as a detection area.
Apply to All	Apply the current settings to all available channels
Exit	Exit and save settings (return to motion detection menu)
Close	Close the pop-up window

Please see section 'Video Loss' (Event setup – page 25) on further details and Receiver Setup.

3-2.3 Sensor

The Sensor (Alarm) feature allows the user to setup alerts based upon the DVR's alarm sensors being triggered:

Sensor Description

Item	Description
Enable	Enable/Disable sensor
Polarity	When the sensor has been triggered, the sensor alert will be activated (i.e. NC; Normally Closed)
	When the sensor has been triggered, the sensor alert will be de-activated (i.e. NO; Normally Open)

3-2.4 System

When a system event occurs the user can be notified by means of email or a relay signal being sent (which can be configured within Receiver Setup). If the buzzer option is enabled, an error such as a hard drive writing failure, will cause the onboard buzzer to sound continuously.

System Setup Description

Item	Description
Buzzer	Enable buzzer alarm when recording error
Relay	Enable a relay signal to be sent upon an event occurring

Please see section 'Video Loss' (Event setup – page 25) on further details and Receiver Setup.

3-3 Camera Setup

Camera Setup Description

Item	Description
Mask	Check the box to Enable/Disable mask function for LIVE mode
Name	Channel name
Timestamp	Set Time Stamp position (by using adjacent blue box)

3-3.1 PTZ Setup

The DVR allows users to control PTZ functions of your camera (See image above). Please ensure that the PTZ camera is connected correctly to the RS-485 port of DVR.

PTZ Setup Description

Item	Description
Enable	Click the box to Enable/Disable PTZ function.
Protocol	Set up the protocol of PTZ cam. The supported protocols are: PELCO-D, PELCO-P, Merit LiLin 1, Merit LiLin 2, SAMSUNG, LG-MultixE
PTZ ID	Select the PTZ ID (values from 0 to 255)
Baud Rate	Select Baud Rate for PTZ (2400, 4800, 9600,19200)

3-4 Account Setup

The DVR allows one main administrator account and up to 8 additional users that can access the DVR both locally and via remote access.

3-4.1 Administrator

The administrator account has access to all areas of the DVR's function/features. The default admin account and password is 'admin' and '123456'



The screenshot shows a window titled "Account Setup". At the top, there is a tab bar with "Admin" selected and tabs numbered 1 through 8. The main area contains a user icon on the left. To the right of the icon are two checkboxes: "Enable" (checked) and "Expire" (unchecked). Below these are three labels: "Name:", "Password:", and "e-Mail:". To the right of these labels are three input fields. The "Name" field contains the text "Admin". The "Password" field contains seven dots. The "e-Mail" field is empty. At the bottom of the window are two buttons: "OK" and "Cancel".

Administrator Setup Description

Item	Description
Enable	Check to activate the user's account.
Expire	Check to deactivate user account
Name	Set up administrator username
Password	Set up password for administrator account (Passwords can be a mix of letters and numbers which are also case-sensitive).
e-mail	Set up administrator email address

3-4.2 Other Users

User Account Description

Item	Description
Enable	Check to activate the user's account.
Expire	Check to deactivate user account. Users can also set an expiry date for specified user account by the clicking corresponding date to the right of the checkbox.
Name	Set up account username
Password	Set up account password for each user. Passwords can be a mix of letters and numbers which are also case-sensitive.
e-mail	Set up user email

3-4.2.1 Permission

The Account Setup menu is designed to provide individual user role-based permissions. The administrator can therefore choose what functions/features each user has access to (see image above);

Permission Description

Item	Description
Console Playback	Select which channels the user can playback (on the local machine)
Remote Live & Playback	Select which channels the user can playback and view live via remote access.
Console	Select the functions the user can access to locally (i.e. Live, Playback, Backup, Configure, System, PTZ)
Remote	Select the functions the user can access via remote access (i.e. Live, Playback, Backup, Configure, System, PTZ)

3-5 Network Setup

The image shows a 'Network Setup' dialog box. At the top, it says 'Connected to:' with a dropdown menu set to 'Static IP'. Below this are three tabs: 'Static IP' (selected), 'PPPoE', and '3G'. The 'Static IP' tab contains fields for IP, Subnet Mask, Gateway, and DNS, each with a numeric input field. The values are: IP: 192 . 168 . 60 . 153, Subnet Mask: 255 . 255 . 255 . 0, Gateway: 192 . 168 . 60 . 1, and DNS: 192 . 168 . 60 . 1. Below the tabs are four more tabs: 'HTTP', 'DDNS', 'NTP', and 'Mail Setup'. The 'HTTP' tab is selected and contains a checked 'Enable' checkbox and a 'Port' field set to 8100. At the bottom are 'OK' and 'Cancel' buttons.

Network Setup Description

Item	Description
Connected to	Setup mode for network connection: (DHCP, Static IP, PPPoE, 3G)
DHCP	IP address will be assigned by DHCP server automatically
Static IP	Enter to set up Static IP
PPPoE	Enter to set up PPPoE
3G Setup	Enter to set up 3G
HTTP Setup	Enter to set up HTTP
DDNS	Enter to set up DDNS
NTP	Enter to set up NTP
Mail Setup	Enter to set up email

3-5.1 Networking Setup

There are three ways to connect to the network as followed.

3-5.1.1 DHCP Setup

When DHCP is selected, IP address will be assigned by DHCP server automatically.

The image shows the same 'Network Setup' dialog box as above, but with the 'Connected to:' dropdown set to 'Static IP' (though the description implies DHCP). The 'Static IP' tab is selected, and the IP, Subnet Mask, Gateway, and DNS fields are populated with the same values as in the previous image. The 'HTTP' tab is also selected, showing 'Enable' checked and 'Port' set to 8100. The 'OK' and 'Cancel' buttons are at the bottom.

3-5.1.2 Static IP Setup

To setup a Static IP for network connections, the following information is required:

Static IP Setup Description

Item	Description
IP	Enter IP address provided by ISP
Subnet Mask	Enter IP address of Subnet Mask provided by ISP
Gateway	Enter IP address of Gate way provided by ISP
DNS	Enter DNS address provided by ISP.

3.5.1.3 PPPoE Setup

To setup a PPPoE for network connection, the following information is required:

PPPoE Description

Item	Description
User	Enter user name provided by ISP
Password	Enter password provided by ISP

3-5.1.3 3G Setup

To setup a network access via a 3G connection, the following information is required:

Please Note: This function only supports the Huawei 3G card currently

The image shows a 'Network Setup' dialog box. At the top, it says 'Connected to:' with a dropdown menu set to '3G'. Below this are three tabs: 'Static IP', 'PPPoE', and '3G'. The '3G' tab is selected. Inside the '3G' tab, there are five input fields: 'Dial Number:', 'PIN:', 'APN:', 'User:', and 'Password:'. Below these fields are four more tabs: 'HTTP', 'DDNS', 'NTP', and 'Mail Setup'. The 'HTTP' tab is selected. In the 'HTTP' tab, there is a checkbox labeled 'Enable' which is checked, and a 'Port:' field with a spinner set to '80'. At the bottom of the dialog are 'OK' and 'Cancel' buttons.

3G Setup Description

Item	Description
Dial Number	Dial-up Number (set by the ISP)
PIN	Enter SIM card password
APN	Enter APN details
User	Enter ISP username
Password	Enter ISP password

3-5.2 HTTP Setup

The image shows an 'HTTP Setup' dialog box. It has four tabs: 'HTTP', 'DDNS', 'NTP', and 'Mail Setup'. The 'HTTP' tab is selected. In the 'HTTP' tab, there is a checkbox labeled 'Enable' which is checked, and a 'Port:' field with a spinner set to '80'. The dialog box has a grey background and a black border.

HTTP Setup Description

Item	Description
Enable	Check to enable HTTP server. Users can remotely access into the DVR over the network if the HTTP function is activated.
Port	Enter a valid port value from 1 up to 65535. The default value is 80

3-5.3 DDNS Setup

DDNS Setup Description

Item	Description
Enable	Enable/disable DDNS function.
Server	Enter the registered SMTP Server (i.e. www.no-ip.com)
Host	Enter the completed registered SMTP Server.
User	Enter user name.
Password	Enter password.

3-5.4 NTP Setup

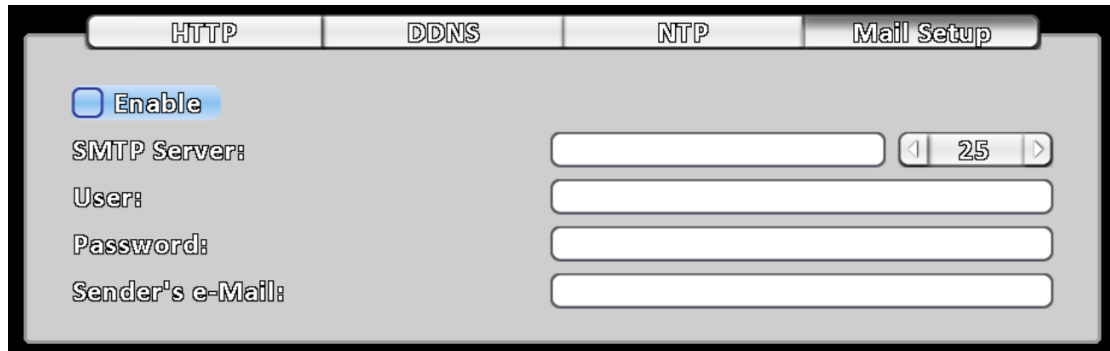
This function allows the user to synchronize the DVR with an external time server:

NTP Setup Description

Item	Description
Automatically Synchronize	Check to enable DVR automatic synchronization function when rebooting
Update Interval (Hours)	Setup interval for time synchronization
Server	Setup time server address
Update Now	Effectively, Date and Time show on DVR will immediately correspond with those in internet server

3-5.5 Mail Setup

When event occurs (such as Video Loss, Motion Detection etc.) the DVR can be setup to email a receiver account automatically.



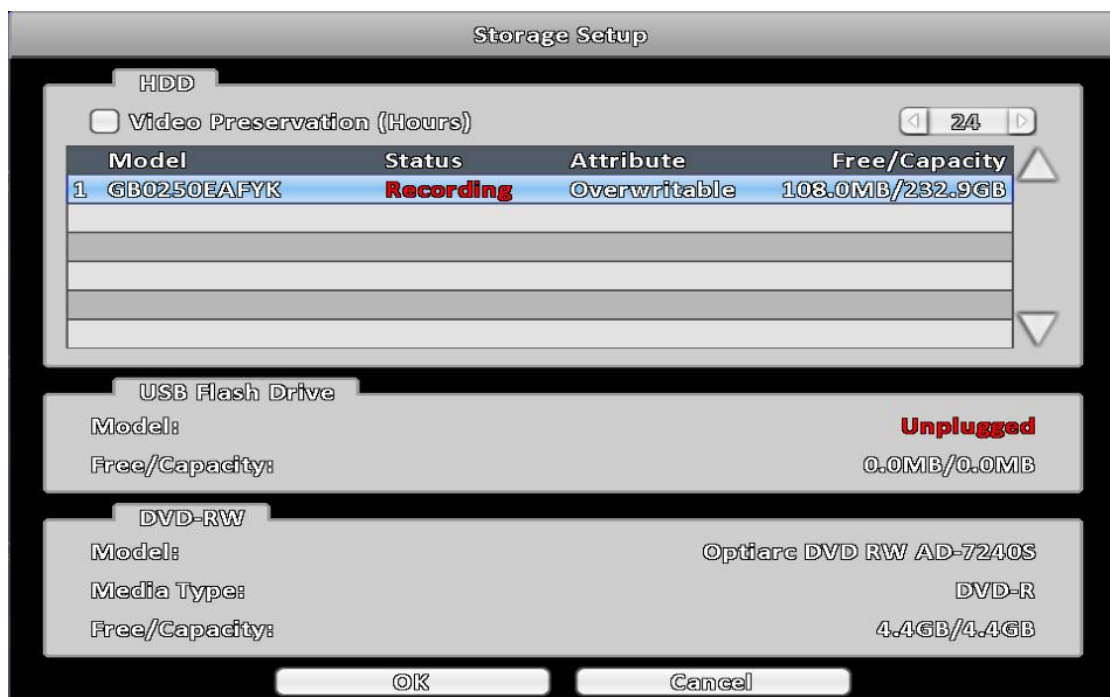
The Mail Setup window features four tabs: HTTP, DDNS, NTP, and Mail Setup. The Mail Setup tab is active, showing an 'Enable' checkbox (checked), an SMTP Server field, a User field, a Password field, and a Sender's e-Mail field. A port number '25' is displayed next to the SMTP Server field.

Mail Setup Description

Item	Description
Enable	Check the box to enable/disable email Notification function
SMTP Server	Set up SMTP Server name and port
User	Enter to set up User Name.
Password	Enter to set up Password.
Sender's e-Mail	Enter to set up e-mail address of receivers.

3-6 Storage Setup

3-6.1 HDD Setup



The Storage Setup window has three tabs: HDD, USB Flash Drive, and DVD-RW. The HDD tab is active, showing a 'Video Preservation (Hours)' setting at 24. Below is a table of HDDs:

Model	Status	Attribute	Free/Capacity
1 GB0250EAFYK	Recording	Overwritable	108.0MB/232.9GB

Below the HDD table, the USB Flash Drive tab shows 'Model:' and 'Free/Capacity:' fields, with a status of 'Unplugged' and '0.0MB/0.0MB'. The DVD-RW tab shows 'Model:' (Optiarc DVD RW AD-7240S), 'Media Type:' (DVD-R), and 'Free/Capacity:' (4.4GB/4.4GB). At the bottom are 'OK' and 'Cancel' buttons.

HDD Setup Description

Item	Description
Video Preservation (Hours)	Setup the video preservation period. Recorded video will be deleted automatically after expiry of preservation period.
Format	Select the hard drive and press "Start" to begin the formatting process (i.e. the DVR will clear the hard drive data). When the status bar displays "successful" the hard drive formatting is complete. The user will now be able to see the hard drive information (model, capacity) from the main menu.
Model	Displays HDD model
Status	Displays HDD status (Recording/Error)
Attribute	Displays HDD Attributes (Rewritable/Writable/Read-Only)
Free/Capacity	Displays HDD capacity (Free/Capacity)

3-6.2 USB Flash Drive Setup

USB Flash Drive	
Model:	USB FLASH DRIVE
Free/Capacity:	2.52GB/7.45GB

USB Setup Description

Item	Description
Model	Displays USB flash drive model
Free/Capacity	Displays USB flash drive capacity (Free/Capacity)

3-6.3 DVD-RW Setup

DVD-RW	
Model:	Optiarc DVD RW AD-7260S
Media Type:	DVD-R
Free/Capacity:	4.38GB/4.38GB

DVD-RW Setup Description

Item	Description
Model	Displays DVR-RW model
Media Type	Displays drive type
Free/Capacity	Displays DVR-RW capacity (Free/Capacity)

3-7 System Setup

System Setup Description

Item	Description
DVR Name	The name of DVR will be shown when users login via remote access
Language	Click or press ▼ to select OSD language.
Video Format Detection	DVR specified video format detection (auto-detect, NTSC, PAL), and require a reboot to take effect

Auto Lock Setup Description

Item	Description
Enable	Enable/Disable Auto Lock
Timeout (Seconds)	Set the number of seconds before the system locks the user out of the main menu. Once automatically locked out it only supports basic operations, such as picture freezing, PIP, picture, zoom, auto switch channel, split window switch. To enter the setup menu, search menu, backup menu, status query, playback, and other operations, the user needs to re-login.

Auto Reboot Setup Description

Item	Description
Disable	Enable/Disable Auto Reboot
Every day	Setup auto reboot time everyday
Every Week	Setup auto reboot time every week

The X16D1H also features a unique Dual Monitor option (see image above) that allows the user to share the operating screen/images on separate monitors.

3-7.1 Date/Time Setup

Time Format: PM 03:15:31

Date Format: 6/18/2012

Timezone

GMT+ 03 : 00

☐ Daylight Saving Time

Change Date and Time...

OK Cancel

Date/Time Setup Description

Item	Description
Hour Format	12HOURS / 24HOURS
Date Format	MM-DD-YY / DD-MM-YY / YY-MM-DD

Timezone Setup Description

Item	Description
Time Zone Setup	Set up GMT (from GMT - 13 to GMT+ 13)
Daylight Saving Time	Enable/Disable Daylight Saving Time

3-7.1.1 Daylight Saving Time Setup

Time Format: AM 09:53:54

Date Format: 6/21/2012

Timezone

GMT+ 03 : 00

☒ Daylight Saving Time

Beginning:

January 1st Sunday AM 00

Ending:

January 1st Sunday AM 00

Change Date and Time...

OK Cancel

Item	Description
Beginning	Setup Daylight Saving start Time
Ending	Setup Daylight Saving end Time

3-7.1.2 Change Date and Time

The user can set the local time manually by selecting the button 'Change Date and Time' (as detailed in the image above), which will bring up a new window that contains a calendar:



3-7.2 Monitor Setup

On selecting the monitor setup button a pop-up window showing setup options will appear on the screen, as detailed below:



Monitor Setup Description

Item	Description
1 / 2	Setup the main screen(1), sub-screen (2) the setting of screen display respectively
Resolution	Setup resolution
Border Color	Setup border color
Luminance	Setup screen luminance (from 0 to 100)
Contrast	Setup screen contrast (from 0 to 100)
Saturation	Setup screen saturation (from 0 to 100)
Hue	Setup screen hue (from 0 to 100)

3-7.3 Input Setup

The 'Input Device' allows the user to configure various inputs used with the DVR (i.e. Remote control, Panel, Mouse, Keyboard, Touch screen). The user can firstly enable/disable the 'Key Tone', which produces a sound when using the buttons on the front panel.

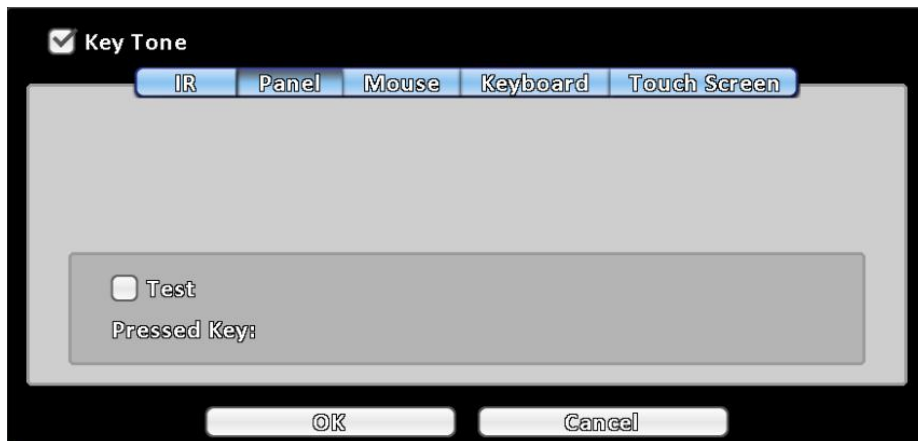
3-7.3.1 Remote Control Setup

The screenshot shows the 'Remote Control Setup' window. At the top, there's a 'Key Tone' checkbox which is checked. Below it, there are five tabs: 'IR', 'Panel', 'Mouse', 'Keyboard', and 'Touch Screen'. The 'IR' tab is currently selected. Under the 'IR' tab, there's an 'Enable' checkbox which is also checked. Below that, there's an 'IR ID' label followed by a dropdown menu showing '0. IC00'. Further down, there's a 'Test' checkbox which is unchecked. Below the 'Test' checkbox is a label 'Pressed Key:' followed by a large empty text box. At the bottom of the window, there are two buttons: 'OK' and 'Cancel'.

Remote Control Setup Description

Item	Description
Enable	Enable/Disable remote control
IR ID	Set the Remote Control ID. Please note if operating multiple DVRs the remote controls will need to work on different operating IDs.
Test	Enable/Disable test function
Pressed Key	Displays the pressed key information during the test

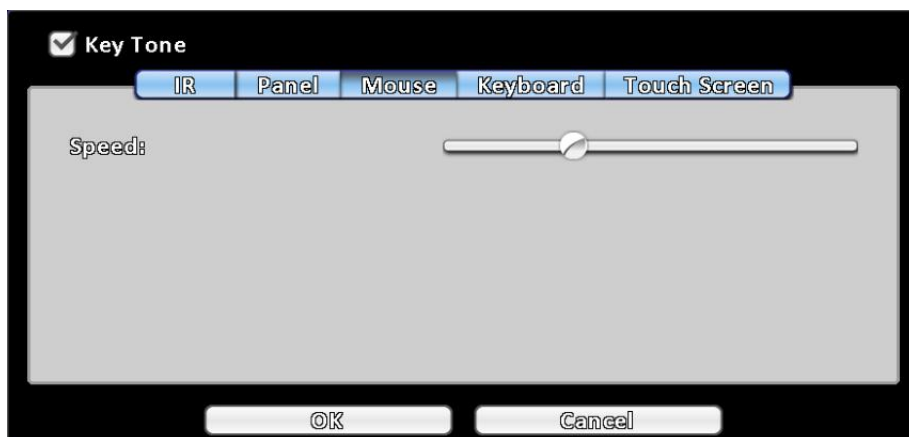
3-7.3.2 Panel Setup



Panel Setup Description

Item	Description
Test	Enable/Disable panel button test function
Press Key	Display press key information

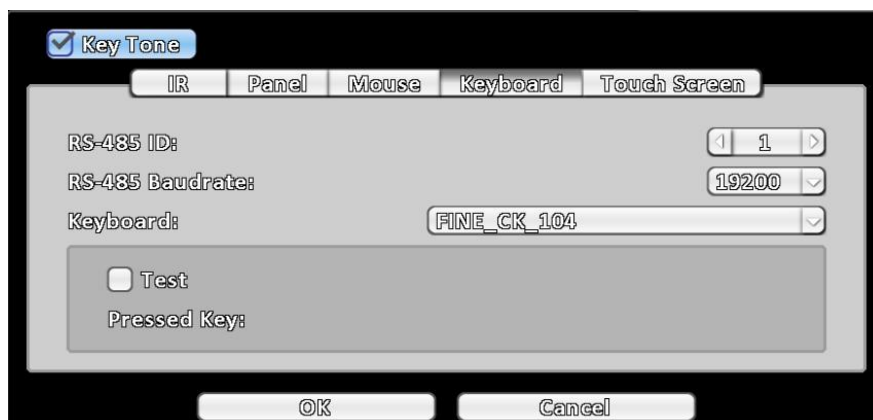
3-7.3.3 Mouse Setup



Mouse Setup Description

Item	Description
Speed	Setup the mouse cursor speed

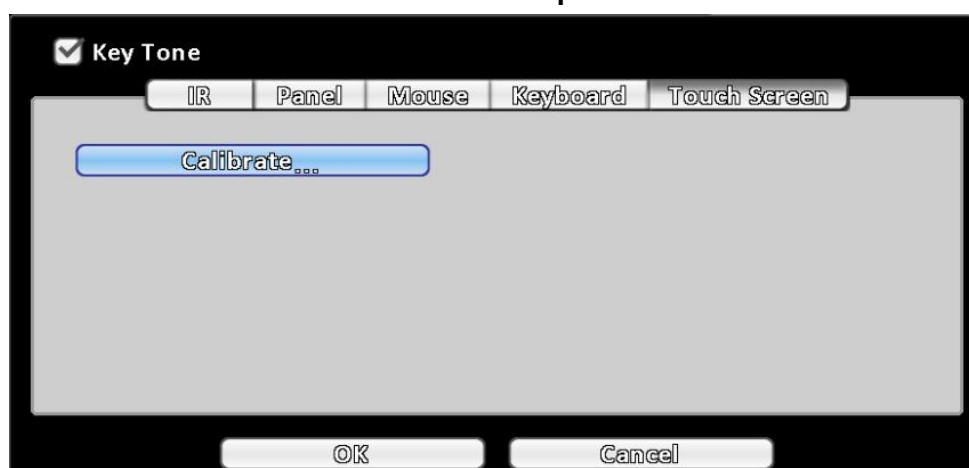
3-7.3.4 PTZ Keyboard Setup



PTZ Keyboard Description

Item	Description
RS-485 ID	Set RS-485 ID (range from 1 to 64)
RS-485 Baudrate	RS-485 Baudrate (2400, 4800, 9600, 19200)
Keyboard	Select PTZ Keyboard
Test	Enable/Disable keyboard test function
Press Key	Displays press key information

3-7.3.5 Touch Screen Setup



3-7.4 Utility Setup



Utility Setup Description

Item	Description
Export Configuration	Exports DVR configuration to USB flash drive or PC. The file is saved as in the format '.cfg' file format
Import Configuration	Imports a previously stored configuration from a USB flash drive to a DVR
Reset Configuration	Reset system configuration
Export Logs	Saves DVR system log to USB flash drive or PC. The file is saved as a '.csv' file format
Clear Logs	Clears all DVR system logs
Upgrade Firmware	Allows the user to upgrade the DVR firmware via a USB device. Please ensure that the DVR is not recording before applying the new firmware update. Please note that the System will reboot automatically once the upgrade is completed.

Please Note: Do not turn off the power to the DVR or remove the USB device whilst upgrading as it may cause an incomplete firmware upgrade and may damage the DVR.

3-8 System Information

System Information

DVR

Model: 16CH (PAL)

Version: 1.0b45

Network

IP: 192.168.60.158

MAC: 00:F1:7D:B4:01:55

HDD

Recording Scheme: Continuous Record

Model	Status	Attribute	Free/Capacity
1 GB0250EAFYK	Recording	Overwritable	208.0MB/232.9GB

S.M.A.R.T. Information...

Close

System Information Description

Item	Description
DVR	
Model	DVR model name and video type
Version	DVR Firmware version
Network	
IP	DVR IP address. If no connection, it will show "Network is not connected."
MAC	DVR MAC address
HDD	
Recording Scheme	Current recording type
Model	Installed HDD model
Status	Current HDD recording status
Attribute	Installed HDD characteristic (Rewriteable/Writeable/Read-Only)
Capacity	Installed HDD capacity (Free/Capacity)

By clicking the 'S.M.A.R.T Information', located at the bottom of the page, the user can view a detailed activity log for the installed hard drive for analysis purposes.

Chapter 4 REMOTE ACCESS

This section explains how users can access the X16D1H via the **iWatchDVR** software, an internet browser and smartphone mobile apps. Please note the following:

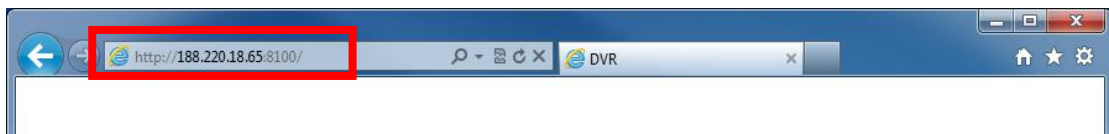
- To access the DVR locally (LAN) users can simply use the network IP address, as detailed in section 3 '**Network Setup**'.
- If users are accessing their DVR's remotely, from a location outside their local network (i.e. from home), they will need to ensure that they have suitable fixed IP address (please consult your Internet Service Provider for further information).
- Users may need to configure their router so that they can access their DVR remotely, a process known as 'Port Forwarding'. Please consult your technician or our technical support for further details.

Please Note: The address used in this image is only for demonstration purposes only. The actual DVR address will be specific to the local network environment or a user defined address.

4-1 Remote Access via Software

The DVR Remote Desktop software will allow users to remotely access and control the DVR from a PC. Please note that the software currently supports Windows XP SP2 and above.

- **Step 1:** Enter the IP address of the DVR in an Internet browser (i.e. Internet Explorer)



- **Step 2:** The user will then be prompted for an account Username and Password:



- **Step 3:** The user will then be taken to an access page (detailed below) and can select the relevant download link (i.e. **iWatchDVR** for PC or Mac) begin the download.



- **Step 4:** Run/install the downloaded **iWatchDVR** software and the user will be prompted for the login details to the DVR (IP address, Port Number, Username and Password):

Address:

188.220.18.65

Port:

8100

User:

admin

Password:

•••••

Connect

Please Note: The drop-down menu can be used to record previous IP addresses. Press “Clear” to clear IP address history.

- **Step 5:** Once the user authentication has been confirmed the **iWatchDVR** software will have access to the DVR:



4-2 Remote Access via Internet Explorer

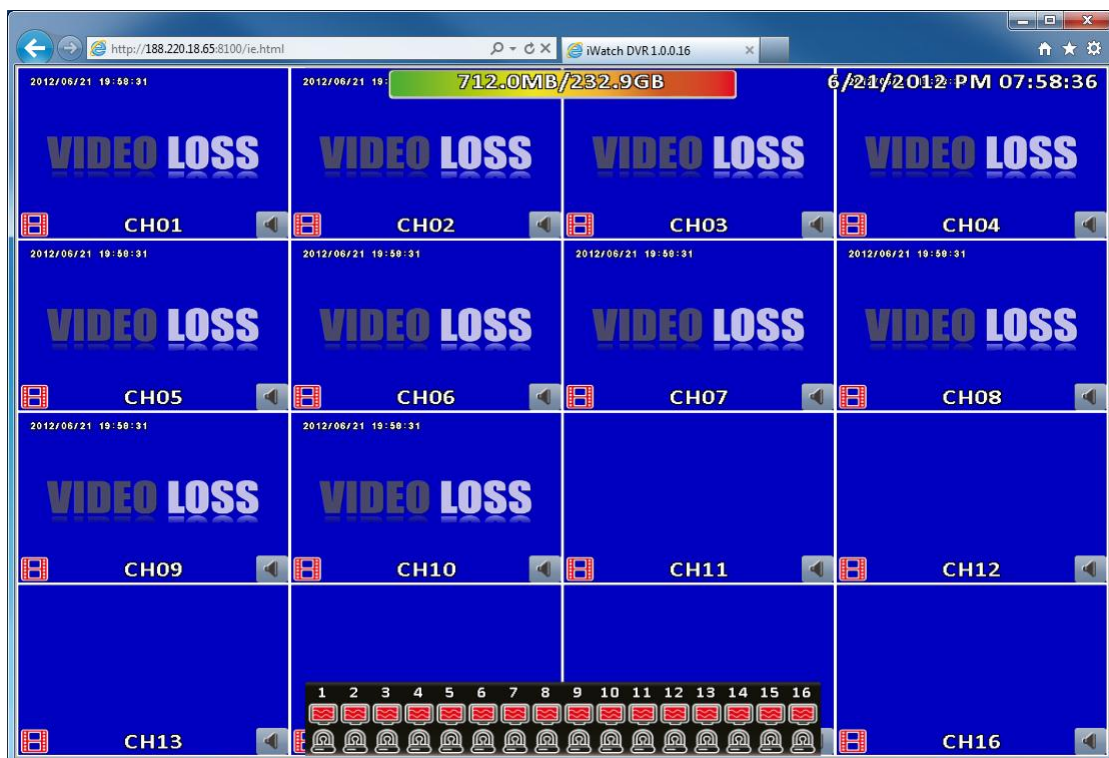
The DVR Remote Desktop software will allow users to remotely access and control the DVR via an Internet browser. Please note that the software currently supports Microsoft Internet Explorer 7, 8 and 9.

- Please follow **Steps 1-2** (page 46)
- **Step 3:** Click on 'iWatchDVR for Internet Explorer 7/8/9'.



Please Note: The user will be prompted to download/install specific ActiveX controls, which are required to access the DVR, when clicking this link for the first time.

Step 4: The link will take the user directly into the DVR

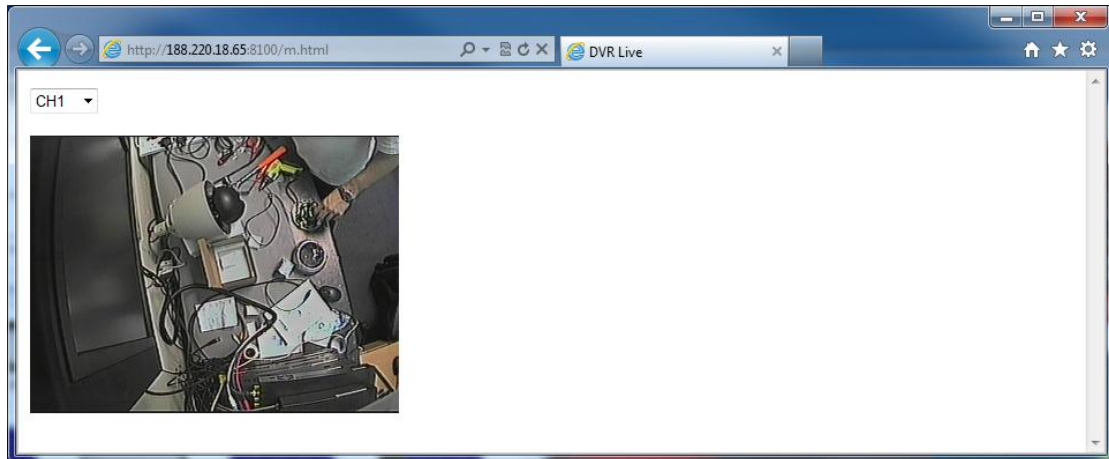


Please Note: The default display when logging in via an Internet Browser is 16:9 (Widescreen mode)

Additionally users can access a simpler version of the software by selecting the '**JPEG Viewer**' option at **STEP 3**:



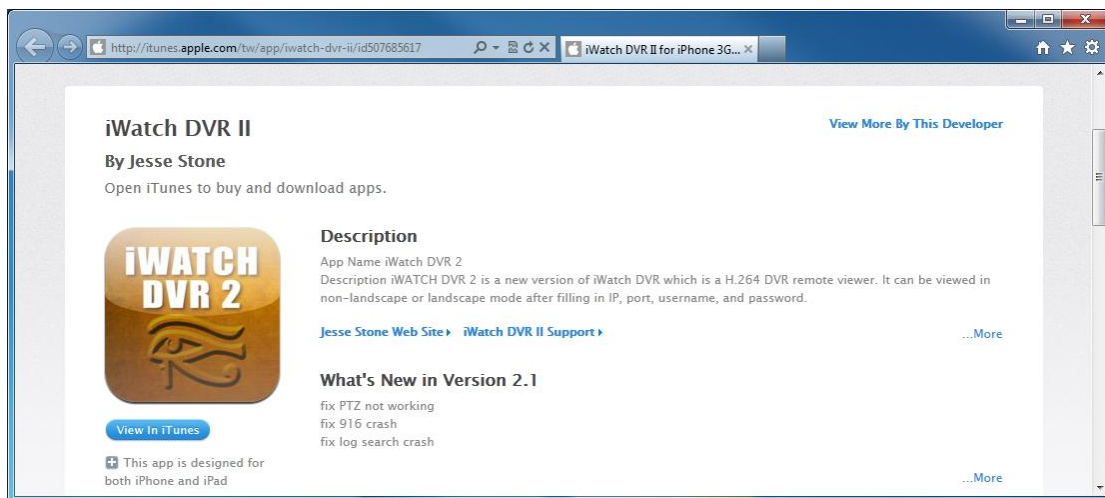
This allows the user to log into one channel at a time (using the dropdown menu) and generates low frame rate image snapshot, which updates itself every few seconds (detailed below):



4-3 Remote Access Via Smartphone Apps

Smartphone apps that allow the user to access their DVR are currently available for Android, iPhone/iPad and Windows Mobile. These apps provide a host of features that allow the user to view live footage (single screen or multi-view options), control PTZ cameras, Zoom, Backup, and search events/logs.

- **Step 1:** Download the **iWatchDVR 2** smartphone apps from the respective online app stores Links direct to the smartphone App stores can be found on the DVRs web access page, as detailed above (Step 3 for setting up remote access):



- **Step 2:** The user can save the relevant DVR access details, as detailed below for iPad/iPhone users:

A screenshot of a mobile application interface titled 'Add DVR'. At the top, there are 'Cancel' and 'Save' buttons. The main area contains five input fields labeled 'Name', 'Host', 'Port', 'User', and 'Password'. The 'Port' field is smaller than the others. The background is a solid grey color.

- **Step 3:** Select to the chosen DVR and once the user details have been correctly verified they will be taken to the main access page.



4-4 Minimum Software Requirements

The remote desktop software requires minimum hardware requirements to operate the software effectively, which are detailed below:

CPU	Intel Pentium 4 above
OS	Microsoft Windows 7, Windows Vista, Windows XP SP2 above
RAM	512M above
VGA Card	Needed to support DirectX9.0 (Above)
Anti-virus software (firewall)	Suitable port and access to be available (i.e. port 80) for access to the DVR via Internet Explorer
Others	DirectX 9.0 above

Please Note: Users can download iWatchDVR smartphone apps for Android, iPhone/iPad and Windows Mobile directly from the links found on the DVR web access page (as detailed on Step 3 for setting up remote access)